

Atty. Dkt. No. 39153/433 (C167596-CIP)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Sander, et al.  
Title: MINIMIZING TRANSISTOR SIZE  
IN INTEGRATED CIRCUITS  
Appl. No.: unknown  
Filing Date: unknown  
Examiner: Nguyen, T.  
Art Unit: 2813

<b>CERTIFICATE OF EXPRESS MAILING</b>	
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(Express Mail Label Number)	(Date of Deposit)
Karen Heier	
(Printed Name)	
<i>Karen Heier</i>	
(Signature)	

**PRELIMINARY AMENDMENT**

Commissioner for Patents  
Box CPA  
Washington, D.C. 20231

Sir:

Please amend the application as follows:

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**MAY 22 2002**

**OFFICE OF PETITIONS**

**IN THE SPECIFICATION:**

On page 1, delete the first full paragraph, and replace this paragraph with the following in accordance with 37 C.F.R. §1.121. A marked up version showing changes is attached.

The present application is a divisional of U.S. Application No. 09/515,875 filed on February 29, 2000 by Sander, et al. which is a continuation-in-part application of U.S. Application No. 09/119,934 filed on July 21, 1998 by Klein, et al.

**IN THE CLAIMS:**

Please cancel claims 1-18 without prejudice.

Please add new claims 23-38.

1           23. (New) The method of claim 21, wherein the insulating liners are each  
2   disposed on an interconnect wall adjacent the gate to separate each of the local  
3   interconnects from the gate.

1           24. (New) The method of claim 21, wherein a source and drain are  
2   disposed by at least partially beneath the insulating liners.

1           25. (New) An integrated circuit including at least a pair of local  
2   interconnects with one interconnect on each side of a gate of a transistor, the  
3   integrated circuit being manufactured by a method comprising steps of:  
4           forming on a semiconductor substrate a thick insulating layer;  
5           forming at least a pair of spaced apart openings in the insulating layer  
6   adjacent the semiconductor substrate;  
7           forming a source in one of the openings and a drain in the other of the  
8   openings;  
9           filling each of the openings with a conductive material to form the local  
10   interconnects, the local interconnects being electrically coupled to the source  
11   and drain;  
12           removing a portion of the insulating layer to form a gate opening between  
13   the local interconnects;  
14           forming a gate dielectric on the semiconductor substrate in the gate  
15   opening; and  
16           forming the gate on the gate dielectric in the gate opening between the  
17   local interconnects.

1           26. (New) The integrated circuit of Claim 25, wherein the space between  
2   the pair of openings is one minimum photolithographic feature and the local  
3   interconnects are each one minimum photolithographic feature.

1           27. (New) The integrated circuit of Claim 25, wherein insulating spacers  
2   are each disposed on an interconnect wall adjacent the gate to separate each of  
3   the local interconnects from the gate.

1           28. (New) The integrated circuit of Claim 25, wherein the source and  
2   drain are formed by implanting impurities in the pair of openings in the insulating  
3   layer.

1           29. (New) The integrated circuit of Claim 25, wherein the portion of  
2   insulating layer removed to form the gate opening is removed by using a masking  
3   material with an opening in the masking material positioned between the pair of  
4   local interconnects.

1           30. (New) The integrated circuit of Claim 29, wherein the opening in the  
2   masking material extends over but not beyond each of the pair of local  
3   interconnects.

1           31. (New) The integrated circuit of Claim 30, wherein the opening in the  
2   masking material is positioned over an active region in the semiconductor  
3   substrate, the active region being surrounded by an isolation region, the opening  
4   in the masking material extending to or beyond the active region.

1           32. (New) The integrated circuit of Claim 25, wherein a conductive layer  
2   is formed on walls of the to line the spaced apart openings and a remainder of  
3   the spaced apart openings are filled with another conductive material.

38. (New) The integrated circuit of Claim 37, wherein the etch selectivity of the etch stop layer is different from the etch selectivity of the insulating layer.

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons which follow.

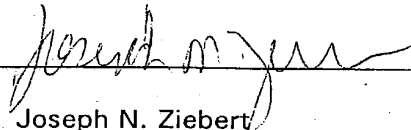
Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested. The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

Respectfully submitted,

Date

9-30-01

By



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**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

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